

## REMARKS

The Office Action dated August 15, 2008, has been received and carefully noted. The above amendments and the following remarks are submitted as a full and complete response thereto.

By this Amendment, claims 1, 21, 24-26, 28-29, and 31 have been amended. Support for the amendments to the claims can be found on at least page 6, last paragraph of the specification as originally filed. No new matter has been added. The amendments to the claims do not narrow the scope of the claims. After entry of this Amendment, Claims 1-31 are currently pending and are respectfully submitted for consideration.

Claims 24-25 were rejected under 35 U.S.C. §101 contending that the claims are directed to non-statutory subject matter. It is noted that Claims 24 and 25 have been amended to claim a computer readable record medium having stored thereon computer-executable instructions for causing a computer to perform the method for processing a data record for finding a counterpart in a reference data set. Therefore, Claims 24 and 25, after amendment, meet the requirements under 35 U.S.C. 101 and withdrawal of the rejection of these claims is respectfully requested.

In the Office Action, Claims 1-7, 9-20, 24, 26-27, and 29-31 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pub. No. US 2004/0024760, to Toner et al. ("Toner") in view of U.S. Pub. No. US2004/0181758 to Murakami et al. ("Murakami") and further in view of U.S. Patent No. 7,231,343 to Treadgold et al. ("Treadgold"). Claim 8 was rejected under 35 U.S.C. §103(a) as being unpatentable over Toner in view of Murakami and Treadgold, and further in view of U.S. Pub. No. US

2002/0078024 to Bellany et al. ("Bellany"). Further, Claims 21-23, 25, and 28 were rejected under 35 U.S.C. §103(a) as being unpatentable over Toner in view of Murakami.

It is noted that Claims 1, 24-26, 28-29, and 31 have been amended. To the extent that the grounds for rejection are still applied to the currently pending claims, they are respectfully traversed.

Claim 1, as claimed, recites that if the predetermined synonym acceptance criterion is fulfilled, associating the value of the data field and the synonym candidate as synonyms and automatically updating a synonym set associated with the value of the data field by adding the synonym candidate to the synonym set without intervention of a user before searching for a counterpart. Similar features are also included in other amended independent Claims 21, 24-26, 28-29, and 31.

In response to Applicants' Amendment filed May 28, 2008, the Office Action has acknowledged that Toner, as modified by Murakami, does not disclose all features of Claim 1. However, the Office Action referred to a third document, Treadgold, and now submits that Treadgold discloses that synonyms are created through explicit learning, and that therefore all features of claim 1 are known from a combination of these three documents.

The Office Action also disagreed with Applicants' remark that Toner and Murakami relate to different fields of inventions and is of the opinion that it would have been obvious to an ordinary person skilled in the art to combine Toner and Murakami.

Applicants respectfully disagree with both of these assertions.

Applicants respectfully submit that when assessing the inventive merit of the present invention, it is essential to note that claim 1 shall be considered as a whole, and should not be artificially broken into its parts.

In the present invention, new candidates for synonyms are actively searched for and the synonym set is automatically updated each time a new acceptable synonym candidate is found during the process of finding a counterpart in a reference data set without any intervention by the users of the system. That is, in the present invention the synonym data base is automatically updated as part of the process of searching for counterparts, and it is essential to note that the novelty lies in part in that searching and determining steps are linked to each other so that an automatic and dynamic update of the data base is provided. Therefore, rather than just looking for acceptable candidates, in the present invention, the synonym tables or the like are dynamically updated by adding all determined new acceptable synonyms into the synonym set during the search before the actual searching step takes place. The automatic update occurs in real time, and therefore the updated synonym set can be used already when searching for the counterpart for the data record. Support of these descriptions can be found in the specification at, for example, page 6, last paragraph.

Therefore, the invention provides a dynamic synonym set that is automatically updated, wherein the synonym set can be considered in the searching step forming a part of the procedure rather than sometimes in the future. This provides advantage for example because the search provides a result also in the occasion that the search term has not been previously defined as being an acceptable term and even if the user does not have any knowledge of the possible synonym. The claimed solution does not require

any contribution from the users to consider and accept new synonym candidates, but the update can be fully automated and occurs in real time.

As admitted in the Office Action, the claimed subject matters are not anticipated and apparently not obvious based on the combination of Toner and Murakami. It is respectfully submitted that it would not have even been obvious for the person skilled in the art, if starting from Toner, to have a look at Murakami, since these two documents relate to different operations and even if combined, would not achieve the method recited in amended Claim 1, or methods/apparatus recited in other independent claims.

Toner relates to search technologies and/or data association where names of foreign origin are matched to names in English by converting the names in the idealized, or normalized, versions of themselves based on their true spelling in their original language. The idealization process is based on phonetic searching method rather than one that takes into account writing variations, as required in the present invention. There is nothing in Toner about updating a synonym set by adding a synonym candidate to the synonym set. In Toner no such update takes place, but instead it updates a record corresponding to the match with a pointer of the matching row, see paragraph 0113. Toner does not even hint any possibility of updating a synonym set.

Murakami, on the other hand, concentrates on classifying unclassified data and relates to handling of large amount of document data as a corpus and is applied to generation of candidate synonyms for a word appearing in a document based on text mining. Again, this is not what the claimed invention aims to achieve. Instead of this, in the independent claims of the present invention, synonym candidates are determined based on an already classified input data, and the present invention does not aim to

create a thesaurus usable in text mining to provide a more accurate document analysis, as is the purpose of Murakami, see for example paragraph 0015 of Murakami. The present invention has nothing to do with document mining. Instead, the aim is to improve searching of counterparts for data records such as a street name, a family name or another identifier of a location, person and so forth.

Treadgold et al. relates to a synonyms mechanism for natural language systems. As mentioned in the abstract, in Treadgold synonyms can be learned from user input and written into a synonyms database. It is essential to note that the update procedure of Treadgold is not automatic but requires user input, see for example line 61 in column 4, or line 32 in column 5. As quoted by the Office Action, a passage from column 5 clearly shows that user interaction plays a crucial role in the procedure of Treadgold. This is exactly opposite to the disclosure of the present application, see for example the last paragraph on page 6 of the application as filed wherein it is made clear that the synonym set is updated dynamically and that the synonym set update is part of the process for finding counterparts to data records to be processed, and is carried out automatically depending on a predetermined synonym acceptance criterion. Instead of this, Treadgold teaches that the user has to actively take part in the update.

Based on the above, none of the cited art, when taken singly or in combination, teaches or suggests each and every element of the claimed invention. More particularly, none of the cited art teaches or suggests “automatically updating a synonym set associated with the value of the data field by adding the synonym candidate to the synonym set without intervention of a user before searching for a counterpart,” as recited in amended Claim 1 and similarly in amended Claims 21, 24-26, 28-29 and 31.

Therefore, amended Claim 1 is allowable over the cited art. As amended Claims 21, 24-26, 28-29, and 31 include similar features of amended Claim 1, they are likewise patentable at least for the same reasons stated above with respect to amended Claim 1.

Similarly, Claims 2-20, 22-23, 27, and 30 that depend from allowable independent claims are likewise allowable at least due to their dependencies from allowable independent claims.

It is noted that the assignee has used the invention for sometimes by now for processing street names and addresses. The street name synonym table grows in each month by thousands of lines without any interaction from the operators and the synonym table has automatically increased several times of its original size. The quality of the synonyms has not been a problem but considerably savings have been obtained in the amount of required human intervention and improved quality in the synonym tables. Accordingly, it is believed that the present invention has a great commercial value. Therefore, the claimed subject matter should be allowable.

### **Conclusion**

In view of the foregoing, reconsideration of the application, withdrawal of the outstanding rejections, allowance of the currently pending claims, and the prompt issuance of a Notice of Allowability are respectfully solicited.

Should the Examiner believe anything further is desirable in order to place this application in better condition for allowance, the Examiner is requested to contact the undersigned at the telephone number listed below.

In the event this paper is not considered to be timely filed, Applicant respectfully petitions for an appropriate extension of time. Any fees for such an extension, together with any additional fees that may be due with respect to this paper, may be charged to counsel's Deposit Account No. 01-2300, **referencing docket number 108800-00007**.

Respectfully submitted,



---

Wan-Ching Montfort  
Registration No. 56,127

**Customer No. 004372**

ARENT FOX LLP

1050 Connecticut Avenue, N.W., Suite 400

Washington, D.C. 20036-5339

Tel: (202) 857-6000

Fax: (202) 638-4810

GEO/CYM